A-2

18. These effects therefore harm Smart as an SSP (Smart RTB+).

19. In addition, there is a multiplicative effect between the two items of damages. Indeed, as we show in this report, losing a client on the market of advertising servers or "*ad serving*" (hereinafter "AS") also generates a loss of SSP revenue because these are higher for customers who use both the advertising server and the Smart SSP.

1.3. Method for estimating the damages

20. The practices implemented by Google are multiple and changing over the period in question. In order to capture the total effect resulting from such practices, an "all-encompassing" estimation method seems to be appropriate for the present case. The general principle is to build a "counterfactual" evolution of Smart's revenues and profits that should have been earned in the absence of Google's practices. To this end, our analysis is based on Smart's performance observed before the start of the practices, on Smart's databases over the affected period, and on the information and analysis results provided in the Decision.

21. The estimation methods presented in this report correspond to standard[7] time comparison estimation methods for estimating damages incurred as a result of anti-competitive practices. Our estimates are also based on the results reported in the Authority's Decision.

22. Although we estimate the damages as a whole, in order to take into account the net effect resulting from all sanctioned practices, our analysis distinguishes between different items of damages, depending on whether we consider the AS market or the SSP market, and whether we consider damages in terms of lost customers, or damages in terms of loss of profitability on existing customers. We also distinguish between the damages incurred over the past period from the damages incurred over the future period.

1.3.1. Estimated damages over the past period

Estimation period of the damages

23. The figure below shows the evolution of Smart's revenue before and during the practices. Smart experienced a [redacted] in the advertising server market until 2013; then its revenue stabilized over the years 2014-2016 [redacted] starting in 2017. In the SSP market, Smart launched its Smart RTB+ product in 2014, whose revenue [redacted]. Nevertheless, our analyses as well as the analyses of the Decision show that Smart's growth in the SSP market would have been higher in the absence of Google's practices.

[7] See, for example, paragraphs 38 and following of the European Commission Practical Guide on Quantifying Damages in Damages Actions Based on Violations of Article 101 or 102 TFEU (https://ec.europa.eu/competition/antitrust/actionsdamages/quantification Guide fr pdf).

Figure 1: Evolution of Smart's revenue in Europe in the advertising server market and in the SSP market, 2005-2021

Source: CRA analysis of Smart data.

24. We estimate damages starting from 2014, the starting point of the practices sanctioned by the Decision[8].

25. However, certain behaviors described in the Decision started before 2014[9]. The Decision uses 2014 as the starting point for the infraction period simply because reliable market share data was unavailable before that date, making it possible to demonstrate with certainty that Google was in a dominant position in the advertising server market over a previous period. The estimates presented in this report are therefore "conservative" from this point of view, that is to say, they tend to minimize the damages incurred by Smart.

Damage items

26. We have identified and estimated five separate damage items. The first two damage items concern the advertising server (AS) market. The first corresponds to a loss of Smart customers in the AS market (hereinafter "AS — Volume Effect"), while the second corresponds to a loss of profitability of existing AS customers (AS — Profitability Effect).

27. The following two damage items are due to cross-selling between the AS market and the SSP market. Indeed, customers who use Smart's ad server have a greater propensity to use Smart's SSP, especially vis-à-vis customers who use Google's server. The loss of customers in the AS market therefore also causes harm in the SSP market. The first corresponds to SSP customers lost due to the loss of these same customers in AS (**SSP A**) and the second corresponds to a loss of profitability of SSP customers who, due to the practices, were not AS customers (SSP B). In the first case, Smart lost the entirety of the customer's SSP revenue. In the second, the loss is limited to incremental revenue

[8] It is also the date from which Smart's revenues stagnate (before falling) in the advertising server market and the year of some significant developments in the markets referred to in the Decision, such as the launch of Google's "enhanced dynamic allocation".

[9] This is the case in particular for the dynamic allocation, whose exact date of introduction is unknown but is before 2009, therefore well before 2014.

34. In order to estimate future damages, we estimated two scenarios, both conservative. The first assumes that the damages accumulated over eight years will take as long to resolve. This scenario is particularly conservative because it is unlikely that the commitments proposed by Google will be sufficient to "eliminate" the past damages completely. Indeed, even if the commitments would be effective and would lead to no "new" damages being incurred in future years (no additional losses), it is likely that lost customers will not return to Smart. This "no catch-up" scenario is estimated in a second scenario. This is the central scenario used in our estimates. This second scenario can also be described as conservative since it amounts to considering that Smart will regain growth similar to that observed before the beginning of the condemned practices. This is unlikely because Smart has lost its economies of scale (allowing it to be more efficient and therefore more attractive) and its reputation, which allowed it to be more competitive with its rivals before the start of the practices. A third scenario corresponds to a situation where the customer base and Smart's turnover stabilize after the commitments, without regaining their past level of growth. This would lead to higher future damages. This third scenario is not estimated at this stage of the procedure.

35. No future damages are estimated on item no. 5 (SSP C) because the latter does not depend on the AS damages and is therefore not affected in the same way by the high migration costs on the AS market. However, this is a conservative hypothesis because, as we mentioned above, there are still no effective remedies for the sanctioned practices.

36. We also stop the calculation of future damages in April 2030, on all positions, even if certain scenarios lead to future damages that may extend beyond this date.

1.4. Results

1.4.1. Estimated damages

37. We calculated the damages on multiple scenarios by crossing the parameters used on each of the five identified damage items. Numerous robustness tests are provided to test the sensitivity of the results to certain parameters of the estimate. Performing such sensitivity tests is in accordance with the usual practice in the context of the damage estimates.

38. **Over the past period, the estimated damages are between [redacted] and [redacted] in present value at the cost of the debt**[14]. It amounts to [redacted] million in our central[15] scenario and is broken down as follows:

[14] The scenarios for updating the damages are presented in section 3.6.

[15] See section 3 on the methodology and parameters used in each scenario. The central scenario corresponds to the scenario following use of the period 2006-2013 as a control period, profitability effect of existing AS customers estimated from average revenue observed in 2013, use of the average value of the estimated effects for the SSP B damages, use of 2013 as a reference year, 40% of impressions would have been lost by AdX in the absence of the practices, whose market share on DFP is 65%, second scenario of future damages (no catch-up).

- [redacted] on damage item no. 1,
- [redacted] on damage item no. 2;
- [redacted] on damage item no. 3;
- [redacted] on damage item no. 4;
- [redacted] on damage item no. 5.

39. **The corresponding future damages are estimated at** [redacted], resulting from the sum of the following damage items: [redacted] on damage items in AS (no. 1 and no. 2) and [redacted] on damage items in SSP (no. 3 and no. 4). We recall that no future damages are estimated on damage item no. 5 (SSP C).

40. **The total damages including the future period according to the central scenario are therefore** [redacted]**, corresponding to the sum of the damages over the past period** [redacted] **and the damages over the future period (**[redacted]**).**

1.4.2. Putting the results into perspective with another approach

41. In order to corroborate the results obtained, we put them into perspective with the evolution of the market size over the period. This comparison echoes a so-called "*top-down"* method that considers a counterfactual scenario according to the dynamics observed in the market as a whole. In other words, rather than starting from Smart's revenues over a past period to estimate a counterfactual evolution during the infraction period ("*bottom-up" method), the* principle of this

> *"top-down" method is to start from the market to then determine Smart's counterfactual market share and its corresponding revenues and profits.*

42. Such an analysis in this case shows the consistency of our estimates with the evolution and/or size of the AS and SSP markets at the European level. The following table shows that our central scenario leads to relatively modest counterfactual Smart market shares, attesting to the "conservative" nature of our estimates.

43. In AS, our central counterfactual scenario leads to a Smart market share of [redacted] in 2019 (last year for which the Decision provides information on market size). This value is very close to Smart's market share over the last year before the practices, in 2013 ([redacted]), estimated from the data of the Decision. In other words, our counterfactual scenario corresponds to a situation where Smart would have followed the same trend as the market over the affected period. An estimation method based on a counterfactual evolution of the AS market would therefore yield similar results. We would then have two completely independent estimation methods, giving similar results. This observation reinforces the level of confidence that we can have on the reliability of our estimates.

44. In SSP, our central counterfactual scenario yields a Smart market share of 4.5% in 2019. Again, this modest counterfactual market share confirms the conservative nature of our estimates.

45. Obviously, these market share estimates are themselves conservative since the market sizes provided in the Decision are themselves affected by Google's practices.

Table 1: Comparison between the results obtained and the market size

2019 values	Market size (Decision, in net value)	Counterfactual Smart turnover (central scenario)	Counterfactual Smart market share
AS	[redacted]		
SSP			

Source: CRA analysis of Smart data and the Decision.

46. The rest of this report is organized as follows. In Section 2, we summarize Google's anti-competitive practices condemned by the Authority. We present the anti-competitive effects of these practices and Smart's damages. In Section 3, we calculate the damages by distinguishing the damages incurred in the advertising server market from the damages incurred in the SSP market. Section 4 summarizes the results obtained for the different estimation scenarios considered.

2. GOOGLE'S ANTI-COMPETITIVE PRACTICES CONDEMNED BY THE AUTHORITY

2.1. Online advertising intermediation markets

47. There are several types of online advertising. First, there are advertisements displayed following an online search, for example on a search engine (these are so-called "Search" advertisements). This market is largely dominated by Google. Secondly, there are advertising displays on the websites of non-search-related publishers, which are mainly so-called "Display" advertisements, from which two subtypes can be distinguished. First of all, there are so-called "Own and Operated" displays, managed directly by the website. This is the case, for example, of advertising displays on Facebook, which Facebook manages itself with its own advertising server. Other displays, called "Open Display", are found on publishers' websites but are operated by a succession of intermediate advertising technologies. This is the case for example of an online newspaper that wants to display advertisements on its site. It is this last type of Open Display advertising that is concerned by the practices sanctioned by the Authority.

48. In Open Display, website publishers monetize their content using the advertising spaces they have. The sales unit is called an "impression" that corresponds to an advertising display seen once by a user.

49. This market has been characterized by a paradigm shift in recent decades: previously, advertisements were primarily placed according to the context or content of the website or media for which they were intended. The advertising is called "contextual". This paradigm has changed significantly in recent years and advertisements are now much more targeted at the user them self, rather than the context. In other words, advertisers

having the best gross offer or even if competing SSPs decide to take a lower revenue share. To illustrate this mechanism, let us take an initial example where everything is "symmetrical" between Smart and AdX, except for the possibility for AdX to adjust prices dynamically and the auction access of competitors. Dynamic income sharing translates into inefficiency of the auction allocation in this example: it is not the SSP that has the highest gross price (corresponding to the price paid by the DSP) that wins the impression. AdX systematically wins by having the option to adjust its net price, at the expense of Smart's SSP in this example, even though Smart would be as competitive and should therefore win half of the impressions.

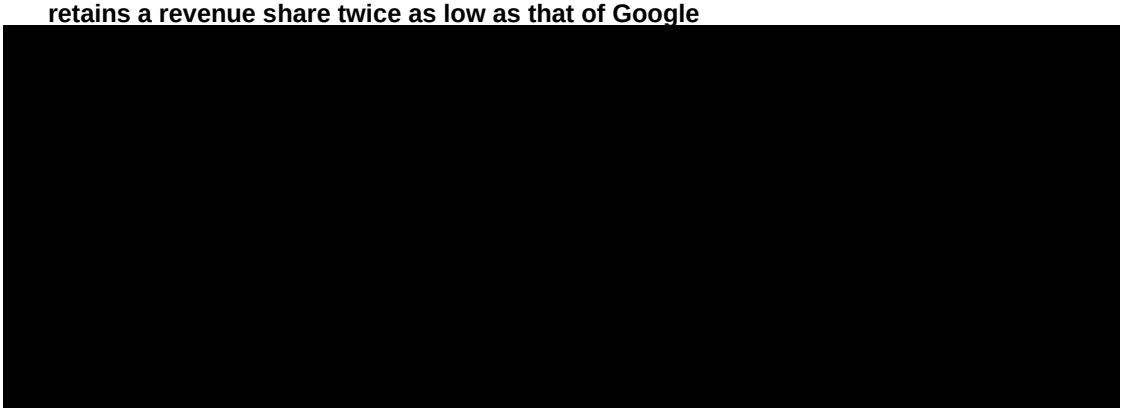
Figure 6: Digital Example 1 — With equal starting conditions between AdX and Smart RTB+, Smart loses all impressions against AdX

Source: CRA.

79. Competitors can also lose revenue even if they take a lower revenue share. In this second example, we assume that the revenue share retained by AdX is 20% and that of Smart is 10% on two impressions whose gross prices are 10/10 respectively on AdX/Smart for the first impression and 10/0 on the second. Smart is therefore more competitive in this example. With the ability to discriminate by price, AdX can adjust its revenue share to win the first impression, which it would have lost otherwise, and increase it on the second. The revenue share retained by AdX is equivalent to its total contractual value (20%), but the share actually retained from the publisher's point of view is higher than if there was no discrimination (15%). Therefore, publishers are also harmed as a result of this rate discrimination in this example.

80. Without dynamic revenue sharing, Smart and AdX each win one impression. With dynamic revenue sharing, AdX wins both impressions. Smart loses all impressions despite its greater competitiveness. Such inefficiency harms both Smart (who wins fewer impressions) and publishers (who receive lower revenue for their impressions).

Figure 7: Digital Example 2 — Smart loses all impressions even assuming it retains a revenue share twice as low as that of Google



81. In addition, Google has the option to adjust the operation of AdX according to the data communicated by DFP. As explained in the Decision[34], Google uses the information obtained via DFP on competing SSP offers to monitor the development of *header bidding* and adapt the operation of AdX accordingly in order to retain its advantages.

82. In order to assess the total effect of all of these advantages on Smart RTB+, it is useful to illustrate the cumulative effect of dynamic allocation, dynamic revenue sharing and the right of last look. To this end, let us start again from a perfectly symmetrical situation, apart from these anti-competitive advantages. Let us assume, for example, that both AdX and Smart RTB+ take a 20% revenue share, that both AdX and Smart RTB+ organize second-price auctions between DSPs[35], and that they both have gross prices of €12 and €10 from the two best DSPs connected to their services.

83. In a normal situation, the winning gross price is therefore €10 for both SSPs (corresponding to the second price between €12 and €10) and the net price with which they compete is €8 (€10 minus the 20% revenue share).

84. The actual situation is quite different. First, because of the dynamic allocation, Smart's SSP cannot bid in real time and therefore must "fight" based on its estimated net price by the publisher. This may be lower (for example, equal to €6), especially on high-value impressions, as we explained above. It will then be sufficient for AdX to beat this estimated price (€6), instead of the price that Smart was actually ready to pay for this impression (€8).

[34] See Decision, para. 196 and following

[35] We can also build an example with Smart at the top price. This is irrelevant to the mechanism described here.

counterfactual growth over the period 2014-2022;

- **Scenario 2**: Growth observed over the period **2006-11** is used to predict the counterfactual growth over the period 2014-2022.

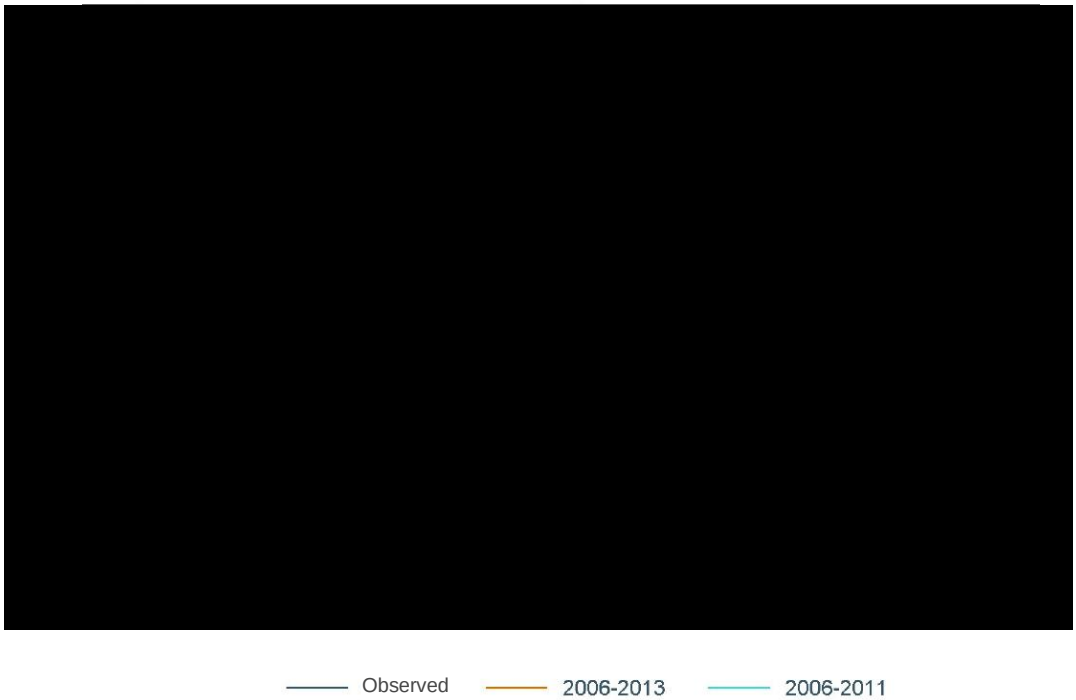
121. In both cases, the loss is calculated starting in 2014; the only difference is therefore the control period used to predict Smart's growth in the absence of the practices.

122. The table below gives the results of the econometric analysis according to the two scenarios. Smart's growth in AS is estimated at about [redacted] customers per month in the first scenario. In other words, estimates indicate that Smart's number of AS customers is growing by just over [redacted] customers per year. This was observed to be relatively stable over the control period. Under the second scenario where the control period is restricted to the period 2006-2011, the estimated monthly growth is approximately [redacted] customers, a slightly higher figure, in line with expectations.

Table 2: Econometric estimate of the monthly growth in the number of customers in AS

Source: CRA analysis of Smart data.
Note: the number of stars indicates the level of statistical significance: * p<10% (low significance), ** p<5% (average significance), *** p<1% (high significance).

Figure 11: Modeling of the counterfactual Smart customer base and comparison to actual developments during the net infraction period



Source: CRA analysis of Smart data.

123. In these two scenarios, a simple time trend predicts Smart's growth over the control period with a small margin of error, which is reflected in the high level of the model's "adjusted R^2" (close to 1, the maximum value). This is due to the presence of relatively stable growth over the period 2006-2013, which can be expected to continue over the subsequent period, starting in 2014, in the absence of the sanctioned practices.

124. We use the first scenario as the central scenario, that is, the period 2006-13 as the control period. This is the scenario with the lower counterfactual between the two estimated scenarios. This approach is conservative, although the two estimated scenarios yield very similar results.

125. The loss in number of missed customers is calculated as the difference between the estimated counterfactual customer base and the observed customer base. The turnover missed is then calculated by multiplying this figure by the average turnover of an AS customer of the last supposedly unaffected year, i.e. the year 2013[54]. Finally, the financial loss is calculated by multiplying the turnover missed by the corresponding AS incremental[55] margin rate for the current year.

$$\text{Damages} = \sum_{\text{periods } i} (\text{counterfactual NB}_i - \text{NB obs.}_i) + \text{average AS customer turnover}_{2013} = \text{AS Margin}_i$$

[54] We do not use the average turnover of the current year because it is affected by the practices.

[55] The incremental margin rate estimate is detailed in Section 3.4 of this report.

126. The loss thus estimated is [redacted] according to the central scenario and [redacted] according to the alternative scenario.

Figure 12: Estimated damages corresponding to the loss of customers in the AS market

Source: CRA analysis of Smart data.

3.2.2. Damages incurred by Smart due to the profitability effect in the advertising server market (damage item no. 2)

127. The second effect of the practices corresponds to the decline in profitability of conquered customers. This sharp decline is observed empirically in Smart's data on the current customer base: customers won by Smart (or who stayed with Smart) are far less profitable customers than lost or missed customers. This translates into a significant drop in the average turnover per Smart AS customer during the infraction period, as we can see in the figure below.

Figure 13: Average net turnover per Smart customer in the advertising server market

Source: CRA analysis of Smart data.

128. According to the same estimation principle as for the volume effect, the loss related to the decline in profitability due to the practices is estimated by comparison to a period before the infraction period as a reference point or control period. This method is conservative for at least two reasons: on the one hand, we know that the practices probably started before 2014, and on the other hand, it is reasonable to consider that the turnover per customer would have increased in the absence of the practices, which we do not take into account, and which minimizes the estimated damages.

129. The damages are calculated according to three scenarios, depending on whether 2013 is used as a reference year or the two or three years prior to the infraction period. The first approach is our central scenario while the second is considered a sensitivity analysis. The results appear robust at the reference period selected: the damages related to the loss of profitability varies between [redacted] and [redacted] depending on the reference period selected and are estimated at [redacted] in our central scenario.

Table 3: Damages to AS profitability estimated according to the year or reference years used (€m)

	2013 (central scenario)	2012-2013	2011-2013
Estimated damages	[redacted]		

Source: CRA analysis of Smart data.

3.2.3. Total damages incurred by Smart in the advertising server market

130. In total, the estimated damages in the AS market lie in a nominal value between [redacted] and [redacted] over the period 2014-March 2022 ([redacted] for the central scenario).

Figure 14: Total damages estimated in AS according to the 2 scenarios considered on the volume[56] effect (€m)

[redacted]

Source: CRA analysis of Smart data.

131. In order to put into perspective and corroborate the results obtained, we compared the counterfactual evolution of Smart's revenue estimated according to the method described above with the dynamics observed in the market. Such a comparison is possible from the data provided in the Decision.

132. This analysis notes that the evolution of Smart's turnover over the period 2014-2019 ([redacted]) would have been, according to our central scenario, almost identical to the evolution of the market (+8.83%). Another way of seeing this result is to consider that according to our central estimate, Smart's market share would not have decreased in the absence of the practices, or Smart's growth in AS would have been similar to that observed in the market. In any case, these results reinforce the level of confidence we

[56] And according to the central scenario for the profitability effect, i.e. use of the last year before the beginning of the practices (2013).

can have in our estimates.

Table 4: Comparison of the average market evolution and Smart's counterfactual evolution

	Average annual growth over the period 2014-19
Evolution of the AS market	8.83%
Counterfactual evolution of Smart in AS	[redacted]
Actual evolution of Smart	

Source: CRA analysis of Smart data.

133. Comparing this counterfactual evolution to the actual evolution of Smart makes it possible to assess the extent of the effects of the practices. While the annual growth observed in the market was +8.8% on average over the period 2014-2019, Smart's actual growth Smart was [redacted] on average over the same period. Finally, it should be noted that this comparison is itself conservative because the market itself has been affected as a whole by Google's practices.

Figure 15: Comparison of Smart's actual and counterfactual market share

Current market share Counterfactual market share

Source: CRA analysis of Smart data.

3.3. Quantification of Smart's damages in the SSP market

134. The estimation of the damages in SSP requires distinguishing between several cases, taking into account the interaction with the damages incurred in the advertising server (AS) market.

135. To this end, we have distinguished between three damage items presented below. The first two (noted A and B) correspond to SSP damages resulting from the loss of customers in AS. First of all, some customers lost in AS, if they had not been lost, would also have become SSP customers (damage A). In addition, other customers lost in AS were already SSP customers but would have generated additional revenue in SSP by being both AS and SSP customers (damage B). Finally, there are SSP damages independent of the AS damages corresponding to the impressions lost by Smart RTB+ due to the anti-competitive advantages that AdX enjoyed (granted by DFP).

136. In summary, the damage items are therefore as follows

- **SSP A damages**. By losing customers in AS, Smart also lost customers in SSP due to cross-selling. The existence of cross-selling is demonstrated from Smart data, where we can see that a certain proportion of customers conquered in AS also become customers in SSP. Damage A corresponds to the loss of margins that these customers would have generated in SSP if they had not been lost in this market.

growth of the SSP market and programmatic advertising as a whole during the period of the practices. Our estimates therefore take these developments into account.

Figure 17: Estimate of the profit of AS customers to deduct damage A

Source: CRA analysis of Smart data.
Note: [redacted] corresponds to the observed proportion of SSP customers among AS customers each year. "% that were not already SSP customers" corresponds to the observed proportion of customers gained in AS who are not already SSP customers at the time of AS migration. "% that would have become SSP customers" is estimated as the product of the two previous proportions (i.e. the proportion of customers that should have been SSP and were not already).

139. The estimated damage A is on average between [redacted] in nominal value. We also take into account the estimated "customer size" effect on the AS part, i.e. the fact that lost/missed customers are larger customers than conquered/retained customers.

Figure 18: Damages in number of customers and margin missed according to the scenario in question[57](€m)

Source: CRA analysis of Smart data.

3.3.2. SSP B damage: revenue lost on existing SSP customers due to customers lost in AS (damage item no. 4)

140. Our estimation method for damage B is based on analyzing the evolution of SSP revenue for customers lost in AS. This helps quantify the SSP revenue gap generated by a *full stack* customer and an SSP customer alone. We expect to see a drop in the customer's SSP revenues after the latter's loss in AS.

141. This analysis makes it possible to fulfill a double objective. First, it quantifies the damages, that is, to answer the question of how much SSP revenue has declined as a result of the loss of this AS customer. This analysis also provides indirect evidence that DFP favors AdX at the expense of competing SSPs. Indeed, it is observed that once the customer leaves (for DFP), Smart RTB+ wins significantly fewer impressions than when the customer was a Smart AS customer. This effect is directly due (at least in part) to Google's practices aimed at promoting its own demand from AdX (Grievance no. 1).

142. We take three empirical approaches to quantifying the corresponding damages.

- A **static comparison** of SSP revenue depending on whether the customer is *full stack* or not. This analysis shows that *full stack* clients generate higher SSP revenue than SSP clients that are not Smart AdServer clients.

[57] And according to the central scenario for the estimated profitability effect in AS, i.e. the use of the last year before the start of the practices (2013).

- A **before-after graphical analysis** determining what the decline in SSP revenue was after the customers were lost in AS. This analysis illustrates the effects through a temporal analysis rather than a static approach.
- An **econometric analysis**. This makes it possible to quantify the effects systematically taking into account all available data. In particular, it takes into account the compositional effects of customers. It is also possible to take into account other explanatory factors.

The first analysis based on a static comparison of SSP revenue indicates that *full stack* clients generate an average SSP revenue [redacted] higher than SSP clients that are not Smart AdServer clients. This analysis suggested that by losing a customer in AS, Smart also loses revenue on the SSP side even if that customer remained a Smart SSP customer. However, this graphical analysis is a priori not causal; it is possible that *full stack* customers are different from other Smart customers, which would explain part of the difference observed in their average revenue.

Figure 19: Average SSP revenue per Smart customer depending on whether or not the customer is an AS Smart customer

Source: CRA analysis of Smart data.

143. Our second analysis considers the temporal evolution of Smart's performance levels in SSP before and after the migration of Smart's customers to AS. For this analysis, we started by identifying all Smart customers who changed their advertising server from Smart (Smart AdServer) to a competing advertising server (DFP for the most part). We then tracked the evolution of their SSP revenue to determine if, from Smart's point of view, losing the customers in AS also led to a decrease in the latter's SSP revenue.

144. The graph below represents a synthetic view of this analysis. Only a selection of customers is presented in this graphic analysis for illustrative purposes, with each gray line corresponding to a separate customer. Each customer's SSP revenues are also standardized to be comparable and to make it easier to read the chart. "Month 0" is the

month in which the customer migrated its advertising server from Smart to a competing AS (mostly DFP).

145. On average, there is a gradual decline in SSP revenues at the time of the ad server migration and a decline of about two-thirds three months after departure. This analysis is consistent with the fact that it is all the more difficult for Smart SSP (Smart RTB+) to access Google's inventories once the publisher has made the choice to use Google's advertising server (DFP) rather than Smart's. This corroborates the conclusions of the Decision on the lack of interoperability between DFP and competing SSPs.

Figure 20: Evolution of average SSP revenue per Smart customer, before and after the customer's departure from AS

Source: CRA analysis of Smart data.

146. We formalized the approach using econometric analyses that estimate the effect of losing a customer in AS on the latter's revenue in SSP. The results obtained are consistent with the graphic analyses presented above. The use of econometric analyses makes it possible to take into account the compositional effects of customers or other factors such as the presence of temporal trends on which SSP revenues may also depend regardless of the practices.

147. We present five models depending on whether we add control variables for the trend observed per customer, exclude customers for whom we have few observations[58], restrict the analysis to a subsample of customers (top 25%) or a sub-period (from 2017 to exclude the first years of Smart's activity in the SSP market). More details on the estimation methodology are provided in Annex B.

148. The results obtained are as follows. First of all, the estimated effect of the loss of the

[58] Our model excludes customers for whom we have less than 12 observations in the data. For these customers, it is more difficult to compare the SSP revenues obtained when the customer was a client in AS and when it was not, the estimate being based on a small number of observations.

customer in AS on the SSP revenue of this customer is between [redacted] (i.e., [redacted]). Thus, the estimated effect is robust in the estimated models: all the coefficients are statistically significant[59]and of a relatively close level. In our central scenario, we used the average of the specifications presented below. The minimum and maximum values are also used as sensitivity analyses.

Table 5: Econometric estimate of the effect on Smart of losing a customer in AS on its revenue in SSP

[redacted]

Source: CRA analysis of Smart data.
Note: the number of stars indicates the level of statistical significance: * p<10% (low significance), ** p<5% (average significance), *** p<1% (high significance).

149. Estimated damage item B is on average between [redacted] and [redacted] depending on the scenarios considered. The breadth of the estimated loss is due to the combination of the parameters on which it depends (i) the period of estimation of the volume effect (2006-2013 or 2006-2011) and the econometric specification used to estimate the gain in SSP revenue on these customers who would have been *full stack* customers in the absence of the practices (we use three values: the minimum value of the models presented, the maximum value or the average value as a central scenario).

[59] That is, they are far enough from zero to consider that the estimated effect is not simply due to statistical factors.

Figure 21: Value of SSP B damage according to the different estimation scenarios

Source: CRA analysis of Smart data.

3.3.3. SSP C damages: loss of SSP revenue on auctions organized by Google DFP (damage item no. 5)

Estimate of damages

150. The SSP C damages correspond to the impressions served by the Google server (DFP) lost by Smart and won by AdX due to the more favorable conditions granted by DFP to AdX. The practices concerned include, among others

- The right of last look;
- Dynamic allocation and improved dynamic allocation;
- Dynamic adjustment of revenue.

151. As we explained in Section 2.2, the right of last look corresponds for example to Google's practice of being able to bid after everyone, knowing the best offer of its competitors (especially in the context of *header bidding).* This means that AdX can win a significant proportion of impressions without having the best price from DSPs or advertisers. The proportion of auctions won by AdX thanks to the right of last look is significant, on the order of "*several dozen percent*", according to the Decision[60].

[60] More specifically, the Decision explains that "it can be asserted that in the absence of the right of last look, third party SSPs would likely have won several dozen percent additional impressions" (Decision, para. 177).

* (% impressions lost) * (% SSP margin)

155. The principle of the estimate is to consider the proportion of impressions that would have been lost by AdX in the absence of the practices (coefficient varying between 30 and 50% of the impressions it actually won), to then distribute them between the different competitors (including Smart RTB+) pro rata of the market shares of competitors in the SSP market.

156. On this basis, the estimate of the SSP C damages is between [redacted] and [redacted] depending on the scenarios considered.

157. These estimates are based as much as possible on the data and analyses presented in the Authority's Decision at our disposal. Refining these estimates in order to reduce the estimate range would require the analysis of data from Google (such as those collected by the Authority to carry out its analyses of the effects of the right of last look), to which Smart does not have access at this stage of the procedure.

Figure 22: Turnover and missed margin in € in SSP — Item C (€m)

[redacted]

Source: CRA analysis of Smart data.

Putting in perspective the results obtained

158. We also sought to put into perspective the results obtained just as we did for the estimation of damages in the AS market. To this end, we calculated Smart RTB+'s counterfactual market share in 2019 in the SSP market based on the data from the Decision.

159. First of all, the size of the SSP market in 2019 was extrapolated using various data from the Decision. To this end, we start from Google's gross revenue in the SSP market, i.e.

€3.75 billion in 2019[64]. We combine this figure with Google's market share, which we estimate is around 55%, based on the estimates from the Decision[65]. This gives an estimated gross SSP market size of €6.818 billion. We then apply an average SSP commission rate of 15% to this figure in order to deduce the net value. It should be noted that the commission rate of Google AdX is "*about 20%*" according to the Decision[66]. We use a lower rate for the entire market, up to 15%, in order to take into account that some competitors charge a lower rate than AdX. Using a lower commission rate is conservative, as it amounts to maximizing Smart's estimated counterfactual market share. We obtain a net market size for the EEE in 2019 of €1.023 billion.

160. Our results are presented in the table below. According to our central estimation scenario, Smart's counterfactual market share in SSP therefore amounts to less than 5% in 2019, a very modest value that once again attests to the conservative nature of our estimates.

Table 6: 2019 EEE values, SSP

Market size (Decision, in net value)	Smart's counterfactual evolution (central scenario)	Smart's counterfactual market share
€1.023 billion	[redacted]	[redacted]

Source: CRA analysis of Smart data and Decision data.

3.4. Estimation of incremental margin levels

161. Once the lost revenue has been estimated, it is necessary to determine the margin rate to be applied to deduce the loss in the form of loss of margins or loss of profits.

162. For this calculation, the applicable margin rate corresponds to the *incremental* margin rate, i.e. the margin that Smart would have lost on the additional sales that it would have made in the absence of the practices. Due to the presence of fixed costs, i.e. costs that do not increase with sales volumes, the incremental margin rate is higher than the average margin rate. This means, for example, that when Smart makes sales of additional impressions on behalf of a customer, the margin made on these incremental sales is potentially very high because they do not generate significant additional costs (fixed or quasi-fixed costs are already paid, so the majority of additional revenue therefore corresponds to additional profits). Access to a larger market share more generally allows companies to be more efficient and increase their attractiveness (for example in this case by improving the efficiency of cookie matching processes). We are talking about economies or gains in scale.

[64] Obtained from the Decision, graph in para. 351.

[65] The Decision gives the distribution of revenue generated by publishers via each of the main platforms for the sale of advertising space carried out by the company Adomik in 2019. This market share is [40-50]% for Google in France, [50-60]% in the United Kingdom and the Netherlands, and [70-80%] in Spain (para. 352). We use the median point, i.e. [50-60]%, and therefore assume that Google's market share is 55%.

[66] Decision, para. 460.

163. The online advertising intermediation industry is characterized by the presence of such fixed costs and significant gains in scale. Indeed, as the Authority recalls in the Decision[67]*:*

> *"the degradation of the attractiveness of SSPs on a majority of accessible inventories has an effect on their investment capacity, insofar as SSPs must cover the same fixed costs, in particular engineering costs, while they see their ability to generate revenue affected. Limiting access to a major part of the available inventory also reduces the effectiveness of SSP cookie matching processes, and therefore reduces the attractiveness of SSPs for DSPs, including for publisher inventories that do not use DFP, since SSPs cannot offer advertisers as accurate and effective targeting as that offered by Google's tools."*

164. The starting point is to consider the purely "variable" margin, corresponding to the deduction of the costs generated by the sale of each additional impression. These are mainly the costs of computer servers. Smart's variable margin in AS and SSP is presented in the table below on AS and SSP activities. This margin is very high due to the presence of large fixed or semi-fixed costs[68]. These margins concern Smart's overall business. Smart considers that they are representative of margins in Europe, Smart being mainly active in this continent.

Table 7: Smart's variable margin rate in the markets concerned

	2014	2015	2016	2017	2018	2019	2020	2021
AS variable margin rate	[redacted]							
SSP variable margin rate								

Source: CRA analysis of Smart data. The rates used are the overall Smart EBITDA rates. Smart considers these rates to be representative of Smart's EBITDA rates in Europe, where Smart's business is the largest.
Note: Overall margins excluding LiquidM and DynAdmic.

165. However, it is necessary to take into account that some costs, initially fixed or semi-fixed, will also increase in the event of a significant change in business. For example, if existing sales teams can initially manage a certain volume of business or additional customers, Smart will a priori have to hire additional staff to manage a significantly larger number of customers.

[67] Decision, para. 388.

[68] It concerns all activities of Smart excluding LiquidM (DSP acquired by Smart at the end of 2019) and DynAdmic (advertising server focusing on video content acquired by Smart in 2021).

166. We therefore estimated an incremental margin that takes into account both an increase in Smart's costs due to the increase in its business and an increase in its level of efficiency due to the additional economies of scale achieved.

167. To this end, we considered comparable SSP companies starting from those mentioned in the Decision[69]and for which we have public data, i.e. Pubmatic and Magnite. According to their public accounts, these companies achieved an EBITDA margin rate of [redacted] respectively in 2021[70]. These margin rates are used as Smart's counterfactual "target" margin rate for that same year. Considering that these rates are themselves affected by Google's practices, we use the rate of [redacted] in our estimates. Such a value seems consistent with the levels typically observed for tech companies. This rate may even seem conservative when compared to the values of certain companies such as Facebook, whose EBITDA margin has fluctuated between [redacted] over the past five years[71].

168. The counterfactual margin rate over the entire period is then estimated by considering a linear progression between 2014 and 2021, making it possible to model a gradual increase in Smart's level of efficiency and economies of scale in the counterfactual scenario.

169. The counterfactual margin rates thus obtained in the central scenario are presented in the table below.

Table 8: Smart's counterfactual margin rate

	2014	2015	2016	2017	2018	2019	2020	2021
Average margin rate	[redacted]							
Total incremental margin rate								
AS incremental margin rate								
SSP incremental margin rate								

Source: CRA analysis of Smart data.
Note: Margins calculated on the basis of global EBITDA rates, excluding LiquidM and DynAdmic.

170. Lastly, we should note that we do not have the data from Google to refine these estimates. Our calculations could be revised on the basis of data that would be communicated by Google regarding its own margin rates on its AdX and DFP products.

[69] See Decision, para. 352.

[70] https://www.globenewswire.com/en/news-release/2022/02/28/2393669/0/en/PubMatic-Announces-Fourth- Quarter-and-Fiscal-Year-Ended-2021-Financial-Results. html

[71] https //www macrotrends net/stocks/charts/FB/meta-platforms/ebitda-margin

174. Taking these elements into account, we estimated the future damages according to two scenarios

- **Scenario 1**: Catch-up of the counterfactual evolution in 8 years from April 2022, i.e. a catch-up as rapid as the cumulative effect of the practices during the infraction period (of a period of at least 8 years);
- **Scenario 2**: No catch-up, but growth by Smart that is identical to that observed before the beginning of the infraction period. This is the central scenario used in our estimates.

175. Each of the two scenarios is conservative for all the reasons mentioned above. We could indeed consider a **Scenario 3** in which the decline in Smart's AS revenue ceases, but without Smart managing to recover the growth before the beginning of the condemned practices. This scenario is not currently estimated based on the available data to assess the impact of the commitments proposed by Google (which, we recall, will not alone be sufficient for a return to a competitive market).

176. Furthermore, conservatively, we do not estimate any future damages to the SSP C item. We also stop the calculation of the future damages in April 2030.

177. The table below summarizes the estimated future damages, crossing the different scenarios considered, from April 2022, when we start the catch-up scenarios.

178. The estimated future damages in the central scenario amounts to [redacted] in nominal value.

Table 9: Future damages (€m) — April 2022+

	Central scenario value*	Min value	Max value	Estimated average value
AS	[redacted]			
SSP				
Total				

Source: CRA analysis of Smart data.
* The central scenario corresponds to the following scenario: use of the period 2006-2013 as a control period, profitability effect of existing AS customers estimated from average revenue observed in 2013, use of the average value of the estimated effects for the SSP B damages, use of 2013 as a reference year, 40% of impressions would have been lost by AdX in the absence of the practices whose market share on DFP is 65%, second scenario of future damages (no catch-up).

3.6. Update of the damages

Considering that the case law is not yet fully established on the issue of updating of damages, we have updated the damages according to three discount rates.

- The legal interest rate;
- The weighted average cost of capital ("WACC");
- Smart's debt rate.

We take as a central scenario the update at the cost of Smart's debt, the logic of which is to consider that, if the amount of the damages had been available over the affected period, it would at least have prevented the company from going into debt for a corresponding amount and/or the amount would have been used to repay existing debts.

4. SUMMARY OF ESTIMATES OF THE DAMAGES INCURRED BY SMART

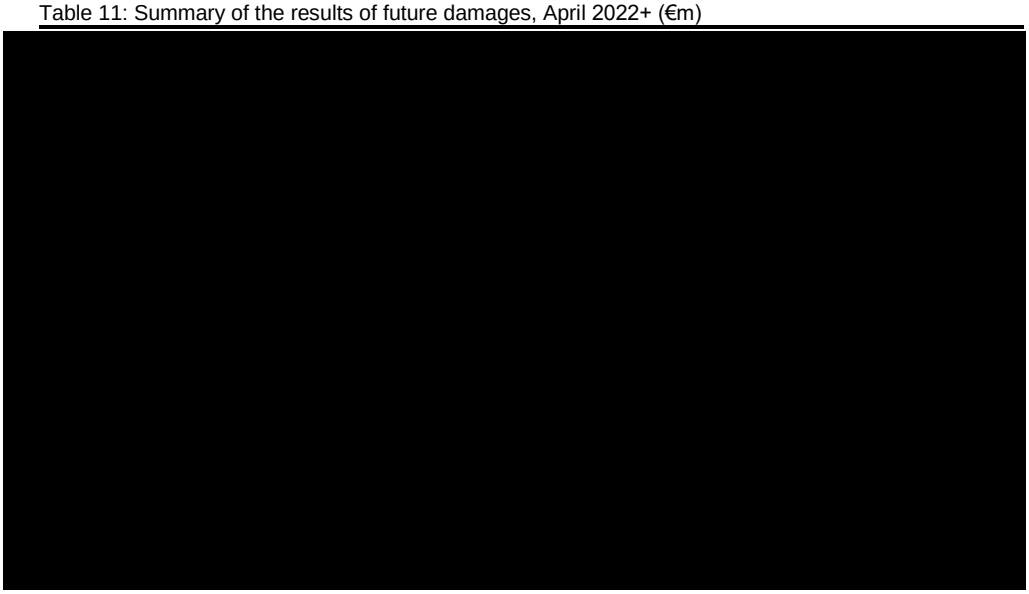
179. The estimated damages crossing the different scenarios considered are summarized in the table below. According to the central scenario, the damages amount to [redacted] over the past period and [redacted] over the future period, i.e. a total of [redacted] (updated at the cost of the debt).

Table 10: Summary of the results of past damages, 2014-March 2022 (€m)

[redacted]

Source: CRA analysis of Smart data.
* The central scenario corresponds to the following scenario: use of the period 2006-2013 as a control period, profitability effect of existing AS customers estimated from average revenue observed in 2013, use of the average value of the estimated effects for SSP B damages, use of 2013 as a reference year, 40% of impressions would have been lost by AdX in the absence of the practices whose market share on DFP is 65%, second scenario of future damages (no catch-up).

Table 11: Summary of the results of future damages, April 2022+ (€m)



Source: CRA analysis of Smart data.
* The central scenario corresponds to the following scenario: use of the period 2006-2013 as a control period, profitability effect of existing AS customers estimated from average revenue observed in 2013, use of the average value of the estimated effects for SSP B damages, use of 2013 as a reference year, 40% of impressions would have been lost by AdX in the absence of the practices whose market share on DFP is 65%, second scenario of future damages (no catch-up).

180. The chart below also provides the actual and counterfactual evolution of Smart's margin in AS and SSP, according to the central scenario[78].

[78] The central scenario corresponds to the scenario following use of the period 2006-2013 as a control period, profitability effect of existing AS customers estimated from average revenue observed in 2013, use of the average value of the estimated effects for SSP B damages, use of 2013 as a reference year, 40% of impressions would have been lost by AdX in the absence of the practices whose market share on DFP is 65%, second scenario of future damages (no catch-up).

Figure 23: Evolution of Smart's actual and counterfactual margins according to the central scenario for estimation of damages

Source: CRA analysis of Smart data.

181. The difference between the actual and counterfactual values represents, according to the central scenario, Smart's damages each month over the period from January 2014 to April 2022.

ANNEX A: ADDITIONAL INFORMATION ON THE DATA USED

A.1 Evolution of interest rates used to update the damages

Table 12: Evolution of interest rates used to update the damages

Source: Bank of France and Smart's own data.

A.2 Evolution of actual revenue

Table 13: Evolution of Smart's actual revenue in Europe (€m)

Source: CRA analysis of Smart data.

A-3 Evolution of the number of customers

Table 14: Evolution of the number of Smart AS customers in Europe

Source: CRA analysis of Smart data.

A.4 Data from the Decision used in the analyses

In our estimation of damages, we use various information provided by the Authority's Decision. These data are summarized below

Table 15: Summary of the estimates of the Decision used in the calculation of damage C

Source: CRA and Decision data.

ANNEX B: DETAILS ON THE ECONOMETRIC ESTIMATE OF THE EFFECT OF LOSING AN AS CUSTOMER ON ITS SSP REVENUE

182. In this section, we give additional details on the methodology used for the econometric estimation of the effect of losing an AS customer on its SSP revenue.

183. To this end, we estimate the effect that the presence of an AS customer has on the SSP revenue from that customer. Specifically, the dependent variable used in our model is the logarithm of monthly SSP revenue per customer, and the independent variable is a binary variable that takes the value of 1 if the customer is also an AS customer, and 0 if it is not. We therefore estimate the increase in a customer's SSP revenue caused by the customer's presence in AS.

184. To be able to estimate the effect of serving a client in AS on SSP revenue, it may be necessary to consider the various factors that may affect SSP revenue, such as effects of customer mix, temporal trends and seasonality. These explanatory variables must be incorporated into estimates to neutralize the effects of various factors that may influence revenue over time, but are not directly related to whether or not a customer is an AS customer. For example, SSP revenue may be higher during certain times of the year regardless of the effect of losing some AS customers. We therefore seek to take into account all factors, other than whether or not a customer is present in AS, that affect SSP revenue.

Table 16: Sensitivity of the results of the econometric estimate of the growth of the number of AS customers to the inclusion of a controlling variable for the economic crisis

Source: CRA analysis of Smart data.
Note: the number of stars indicates the level of statistical significance: * p<10% (low significance), ** p<5% (average significance), *** p<1% (high significance). Standard errors are reported in parentheses.